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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,429	04/12/2001	Sam Gat-Shang Chu	AUS920010271US1	1574

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IBM CORP (YA)
C/O YEE & ASSOCIATES PC
P.O. BOX 802333
DALLAS, TX 75380

EXAMINER

THOMPSON, ANNETTE M

ART UNIT PAPER NUMBER

2825

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,429

Applicant(s)

CHU ET AL.

Examiner

A. M. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This application 09/833,429 has been examined. Claims 1-27 are pending.

Specification

1. The disclosure is objected to because of the following informalities: In the abstract, remove the parentheses.

Appropriate correction is required.

Claim Objections

2. Claims 2, 13 and 17 are objected to because of the following informalities: Pursuant to claims 2 and 17, at line 6 pluralize the first instance of "buffer"; at line 10, clarify "the second local clock buffer drives a lower power load" *than what other element?*. Pursuant to claim 13, at line 9, change "is" to *being*. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejection of claims 1-27

4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ginetti et al. (Ginetti), U.S. Patent 5,426,591 in view of Hathaway et al. (Hathaway), 6,425,110. Ginetti discloses a method and apparatus for improving circuit timing performance which affects power consumption. However, Ginetti does not disclose the

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explicit use of clock buffers, although it does reference primitive cells (col. 3, ll. 20-35) which would include the buffers. Hathaway also discloses a method and apparatus for improving circuit timing performance which affects power consumption, and includes a method which deals with cell power levels and drive strengths. It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the teaching of Ginetti with Hathaway as both complement each other by disclosing timing analysis method with Hathaway presenting details which Ginetti excludes.

5. Pursuant to claims 1, 13, and 16 which recite a method (c. 1) and apparatus (c. 13, 16) for reducing power consumption (Ginetti see Fig. 3, col. 7, ll. 1-10; col. 12, ll. 13-48), comprising locating a first latch having more than a predetermined slack period; determining availability of a second latch having more than a zero slack period; replacing the first latch with the available second latch (Ginetti col. 3, ll. 20-48).

6. Pursuant to claims 2 and 17, further comprising locating local clock buffers with reduced loads; determining the availability of a second local clock buffer with a lower power load and replacing the first local clock buffer with the available second local clock buffer (Hathaway, col. 13, line 57 to col. 14, line 67).

7. Pursuant to claims 3 and 18, wherein the first local clock buffer is a high clock power local clock buffer (Hathaway col. 14, ll. 9-33).

8. Pursuant to claims 4 and 19, wherein the second local clock buffer is a low clock power local clock buffer (Hathaway col. 14, ll. 2-15).

9. Pursuant to claims 5 and 20, wherein there is an optimization and iteration of the latch replacing and testing (Ginetti, col. 3, ll. 40-48).

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10. Pursuant to claims 6 and 21, wherein a timing test tests the modified clock circuit (Ginetti, col. 3, ll. 25-28; col. 7, line 45 to col. 8, line 23).

11. Pursuant to claims 7, 14, and 22, wherein the first latch is a high power consumption latch (Hathaway, col. 13, line 57 to col. 14, line 32).

12. Pursuant to claim 8 and 23 wherein the plurality of latches are high power consumption (Hathaway, col. 13, line 64 to col. 14, line 14).

13. Pursuant to claim 9 , 13, and 24, wherein the second latch is low power (Hathaway, col. 13, line 57 to col. 14, line 57).

14. Pursuant to claims 10 and 25, wherein the predetermined slack period is either an input or output slack period (Ginetti, col. 9, line 35 to col. 10, line 7).

15. Pursuant to claim 11 and 26, wherein the input slack period is greater than 100 picoseconds, (see col. 9, ll. 1-52; the length of time selected is considered a designer's prerogative and Applicants' specification has not applied any significance to the time length).

16. Pursuant to claim 12 and 27, wherein the output slack period is greater that 300 picoseconds (see col. 9, ll. 1-52; the length of time selected is considered a designer's prerogative and Applicants' specification has not applied any significance to the time length).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please reference the PTO-892.

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18. Any inquiry concerning this communication or earlier communications should be directed to Examiner A.M. Thompson whose telephone number is (571) 272-1909. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 4:30 p.m..

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

19. Responses to this action should be mailed to the appropriate mail stop:

Mail Stop _____

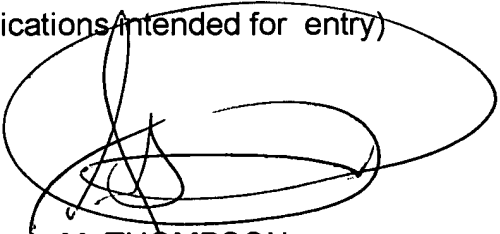
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P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for all **OFFICIAL** communications intended for entry)



A. M. THOMPSON
Primary Examiner
Technology Center 2800